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Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	CC Docket No. 95-72
End User Common Line Charges	)	

Comments of the Center for Democracy and Technology

I. Summary and Overview

The Center for Demoracy and Technology (CDT) applauds the Commission for opening this proceeding[1] to consider the question of how to apply End User Common Line charges[2] to Intergrated Services Digital Network (ISDN) services now being tariffed and deployed throughout the nation's public switched network. Inasmuch as ISDN is a the only affordable, widely available digital connection to the National and Global Information Infrastructure for residential users, small businesses, and community organizations, CDT recommends that the Commission adopt a "one SLC per facility" rule to govern the applications of SLC to ISDN services.

The Center for Democracy and Technology is a non-profit, public interest research organization whose mission is to promote civil liberties and democratic values in new computer and communications technologies. CDT believes that

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[1] Notice of Proposed Rulemaking, FCC 95-212 (rel. May 30, 1995). Hereinafter NPRM.

[2] Hereinafter referred to as Subscriber Line Charges (SLCs). See 47 C.F.R. § 69.104.

Commission's consideration of ISDN pricing policy will have a major impact on the growth of the National Information Infrastructure and the degree to which all citizens have access to new interactive media.

II. The Commission should act to promote nationwide, affordable access to the National Information Infrastructure through residential ISDN service

The last few years have seen explosive growth in the development of the new interactive media including the Internet, commercial online services, as well as small computer bulletin board services, Freenets, and other interactive technology. Taken together, these developments hold out the promise of a true information revolution that will alter the way that our society does politics, business, education, and healthcare. However, the potential of these new technologies for our democracy, our economy, and our culture will only be realized if all Americans have easy and affordable access to the growing information infrastructure. Without the opportunity for full participation, the interactive media will not grow, and our society will suffer from continued social alienation, failures in our democratic process, and increased economic stratification.

The Center for Democracy and Technology recommends that the Commission seek to advance to following public policy goals in its ruling on the SLC issues raised in the Notice:

A. Policy Goal: Go digital

National leaders including Newt Gingrich, Vice President Gore, as well as noted technologists such as Jay Keyworth, Mitchell Kapor, Nicolas Negraponte, and Bill Gates all speak of the importance of the transition from an analog communications

infrastructure to a digital infrastructure.[3] It is the move to digital network services that will truly make the "convergence" of computer and communications technologies possible. Digital access to critical to convergence for two reasons. First, digital service such as ISDN offers increased transport speeds that enable networked multimedia applications. Second, the advanced signaling and interoperability inherent in a digital network enables a truly seamless integration of computer and communications services. A digital platform such as ISDN will be a new seedbed for innovative entrepreneurs to develop the next generation of multimedia services.

B. Policy Goal: Promote services based on open access network architecture

The architectural characteristics of the NII will have a critical impact on the diversity of information sources available, as well as the ease of access for individuals and communities around the country.[4] The analog public switched telephone network enables 'many-to-many' communication but suffers from bandwidth constraints which limit most Americans' access to mulitmedia network services. A true diversity of information in new interactive media will require that all Americans have access to network services that enable communications from any point to any other point, without the interference of information gatekeepers such as are found in the mass media today. As such, the network architectures available to individuals and institutions will have a determinative impact on the

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[3] See Mitchell Kapor, *Where is the Digital Highway Really Heading? The Case for a Jeffersonian Information Policy*, WIRED, July-Aug. 1993, at 53, 57

[4] For a more detailed exposition of this point, see Berman & Weitzner, *Abundance and User Control: Renewing the Democratic Heart of the First Amendment in the Age of Interactive Media*, 104 Yale L.J. 1619 (1995)

First Amendment free flow of information in the information age. The Commission should promote network services based on architectures that enable individuals and institutions to communicate with anyone around the country or the world, without the barriers to diversity that may be imposed by communications gatekeepers.

An open access[5] network, such as ISDN, enables point-to-point communications around the country, as well as easy access to global, open networks such the Internet. Therefore, in the interest in the First Amendment diversity and free flow of information, the Commission should seek policies which, to the greatest extent possible, promote open, many-to-many communications services.

C. Policy Goal: Ubiquitous, affordable access to the National Information Infrastructure

ISDN is becoming increasingly popular among business and residential subscribers that seek high-speed, reliable access to enhanced telecommunications services. As the only widely available, affordable digital on-ramp to the National Information Infrastructure (NII), ISDN has a critical role to play in enabling broad access to the NII.

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[5] See *Clinton Administration White Paper on Communications Act Reform*, 18 Daily Rep. for Execs. (BNA) M-1, M-4 (Jan 27, 1994)

III. Residential ISDN is the only viable option on the market today for mass market, digital access to the National Information Infrastructure

A. ISDN is the only option on the market today for residential, small business, and small organizational use

Since the mid-1980's, the movement towards this digital world has been swift and aggressive. The Regional Bell Operating Companies (RBOC's) combined spending for this period has been well in excess of $100 billion. Of the RBOC's $204 billion of telecommunications plant in service today, over $27 billion is invested in digital switching alone.[6] That figure is more than twice the analog switching assets currently available.[7]

The chart below clearly illustrates digital's explosive growth -- in 1984, only 2.4% of all access lines were served by digital stored program control offices; today, that number has increased to over 56%:

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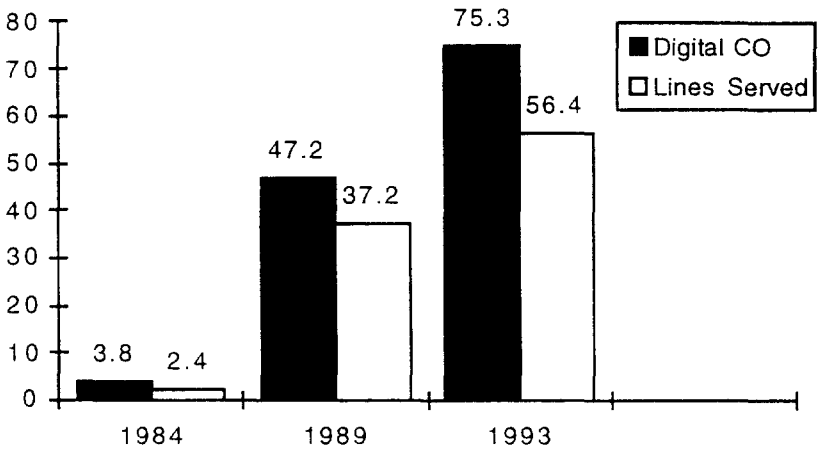
[6] FCC, *Statistics of Common Carriers*, 1994, Table 2.7.

[7] *Id.*

DIGITAL PENETRATION (percentage of penetration, Bell Operating Companies)[8]



Digital CO = number of digital stored program control offices in the U.S.; **Lines Served** = access lines served by digital stored program control offices in the U.S.

Other technologies, such as high-bit-rate digital subscriber line (HDSL) and asymmetrical digital subscriber line (ADSL), offer high-speed data transmission, too (up to 1.5 mbps for HDSL; up to 6mbps for ADSL-3). Both media also have been designed to utilize to the copper loop plant. However, even though HDSL and ADSL are faster, they are currently not readily deployable. Additionally, services and equipment costs for the individual user are generally prohibitive.

While these and other technologies evolve to meet our future needs, connection to the digital basic exchange is increasingly demanded today. ISDN BRI is the next step in the evolution of basic service because it meets those demands now. With few currently deployable options available, its main benefactors -- the small business and residential user -- will be cut out of the digital future.

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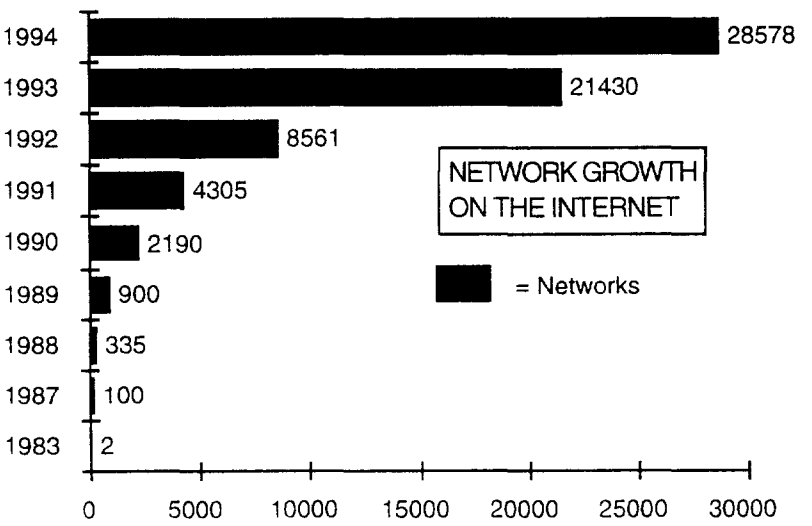
[8]FCC, *Teletrends In Telephone Service*, May 1994, Table 10.

B. ISDN offers access to numerous applications

1. Multimedia Internet services

The advent of the World Wide Web and other multimedia interactive computer services has spurred consumer demand for access to the Internet and other information services, and created an growing market for new applications and services. The tremendous growth of networks on the Internet is another reflection of the PSN's changing use. As the following table indicates, within the space of a decade over 28,000 new networks have been established, many of which offering a dazzling array of information and services best accessed through high bandwidth connections:

GROWTH OF THE INTERNET[9]



[9]Rita Tihan, *Welcome to Cyberia: An Internet Guide*, Congressional Research Service, May 1994, p.4.

2. Telemedicine

Telemedicine is another application which facilitates the gathering of data from distant areas. Once tedious and impractical with modem technology, ISDN has dramatically decreased the time in which large medical files are transferred. Pacific Bell's HealthLink and PhysicianLink enable both doctors and hospitals easier, speedy access to patient records, test results, radiological images, and insurance information. All this allows for better physician data, faster and more accurate diagnoses, and, ultimately, a more cost-efficient health care system.

3. Distance Learning

Every day in the U.S., distance learning applications bring needed expertise into classrooms where it is in short supply. Project Homeroom is one such program which has helped over 550 children in the Chicago area develop greater learning skills through homework correction, interactive instruction, and tutoring. Similar programs throughout America provide for screen sharing, voice, video, and simultaneous interaction with other students and faculty who are geographically remote. In most every situation, these applications can work successfully to eliminate distance as an impediment to greater learning.

4. Desktop video conferencing

Desktop video conferencing also allows for a cost-efficient use of resources. These applications bring people face-to-face through the computer screen without leaving the comfort and convenience of the office or the home. For example, NASA's Jet Propulsion Laboratory (JPL) uses ISDN for desktop video conferencing to increase

productivity by reducing the time and expense of travel. As a result, the JPL has found that engineering and system-design collaborations are easier to arrange, and are often more productive than face-to-face meetings.

IV. The Commission should adopt a "one SLC per facility" policy in order to promote residential, small business, and community organization access to the NII

CDT urges the Commission to adopt a "one SLC per facility," such that ISDN BRI customers would only be assessed on SLC for the single facility over which BRI service is delivered. By keeping ISDN prices low, this policy will surely enable widespread use of ISDN as an access service to the NII. Moreover, we believe it unlikely that any negative impact will be seen on overall support flow in the current access charge structure.

A. "One SLC per facility" policy will encourage residential use

For a number of years, the ISDN market has been stagnant, in part because of prohibitively high ISDN tariffs. Many local exchange carriers are now lowering ISDN BRI rates for both residential and business customers in order to stimulate demand for the service.[10] Demand nationwide for ISDN has increased dramatically in the past three years alone. While it is difficult to accurately predict this demand, the potential for ISDN's growth can be seen in the flourishing of new applications.

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[10] California, Massachusetts and Tennessee have all adopted a marginal cost pricing structure for ISDN (2B+D). California's rate at $26.95 contains a residential flat rate for off peak hours, Saturdays and Sundays, and holidays, with usage rates during business hours. Massachusetts' monthly charge is slightly higher at approximately $37.00, with a flat rate for voice, and a POTS measured rate for data. By far the most attractive, however, is Tennessee's flat rate of $26.00. Rates such as these encourage greater demand because they remain low even when usage is high.

Entrepreneurs, spurred by ISDN's increasing availability, have rushed in to fill the gap. Today, a rich variety of products and services exists, ranging from exotic video teleconferencing to lightning quick access of the Internet. As this market becomes more competitive, prices for goods and services are expected to drop.

Local exchange carriers have made the judgment that lower prices are required to jump start the ISDN market. The Commission should be careful not to act in such a manner as to artificially raise ISDN rates to consumers.

B. "One SLC per facility" is unlikely to lead to SLC revenue shortfall for ISDN BRI services

The primary concern that the NPRM raises regarding a 'one SLC per facility' rule is the negative impact on overall SLC revenue.[11] While this is certainly a possible outcome, no emperical evidence or actual market experience is offered which supports this conclusion. In fact, given the likely patterns of ISDN BRI use in residential, small business, and small organizational settings, SLC revenue can be expected to rise, not fall.

1. New ISDN users in residential, small business, educational, and community settings are likely to install new lines, instead of combining voice and data service

Based on the patterns of computer and modem usage in residential and small business settings, it is unlikely that transition from analog phone usage to ISDN usage will lead to any shortfall in SLC revenues. It is possible that as single ISDN

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[11] Para. 18-20.

BRI line could be used for both voice and data service, thus leading to an overall decline in SLC revenue if the 'one SLC per facility' rule were adopted. However, this is unlikely for several reasons. First, to avoid unexpected disruption of existing voice telephone service, new ISDN users are unlikely to convert their primary phone line to ISDN service. Rather, they would convert a second line already used for modem or fax connection from POTS to ISDN. Second, because of constraints on inside wiring configuration and usage of multiple extensions, wholesale transition from analog to ISDN for voice service in the home will be inconvenient and expensive to the subscriber. The most likely usage pattern for ISDN will follow the patterns already established for home faxes and modems, many of which are placed on a second or third line. A transition to ISDN is not likely to lead to fewer lines coming into the home, thus SLC revenues should not be expected to drop.

2. Stimulating ISDN usage is more likely to increase SLC revenue rather than decrease it, even under a "one SLC per facility" rule

If ISDN proves attractive for residential and small business data connectivity usage, then it should, if anything, lead to increased SLC revenues, even under a 'one SLC per facility' rule. To the extent that ISDN attracts more consumers to interactive online services, the number of local phone lines is likely to see a net increase, thus raising overall SLC revenue. Market analysts predict that U.S. market for ISDN related goods and services will grow substantially. By 1995, sales of these products are expected to top $4.9 billion, up from $2.9 billion in 1993.[12] If this growth is realized, then the Commission can expect a net increase in SLC revenue, even under a 'one SLC per facility' rule. Inasmuch as ISDN is made more affordable

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[12]Kristina B. Sullivan, *ISDN Approaches Its Prime*, PC Week, Jan. 31, 1994, p. 20.

with a progressive SLC rule, revenue will increase due to a net increase in the number of local loops in use and drawing SLCs.

C. Without specific evidence of SLC shortfalls, the Commission should not adopt a SLC policy which unduly burdens new ISDN users

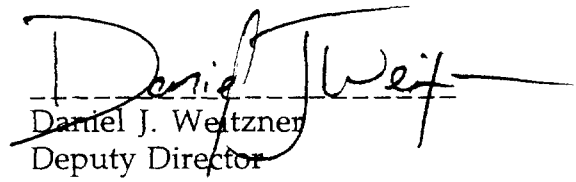
Concern that a 'one SLC per facility' rule would lead to lower SLC revenues is based on a presumption that consumers will substitute a single ISDN BRI service for two analog phone lines. For the reasons stated above, we believe such substitution to be unlikely. CDT acknowledges that it is difficult to predict demand for ISDN service in the future, and that the usage patterns postulated above may not be reflect future usage. However, the Commission is presented with concrete evidence from actual ISDN usage patterns which mitigate against a 'one SLC per facility' policy, the Commission should adopt a progresssive SLC rule which stimulates ISDN usage as much as possible.

V. Conclusion

In order to promote the development of new, digital technologies, increase individual access to multimedia services on the NII, and enhance the First Amendment diversity of information in the interactive media environment, the Commission should adopt a 'one SLC per facility' rule for ISDN services.

Respectfully Submitted,

The Center for Democracy and Technology



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